Exelon Generation®

10 CFR 50.73

NMP2L2672
October 25, 2018

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Nine Mile Point Nuclear Station, Unit 2
Renewed Facility Operating License No. NPF-69
Docket No. 50-410

Subject: NMP2 Licensee Event Report 2018-002, Turbine Trip and Scram Due to Unit Differential Relay Trip

In accordance with the reporting requirements contained in 10 CFR 50.73(a)(2)(iv)(A), please find enclosed NMP2 Licensee Event Report (LER) 2018-001, Turbine Trip and Scram Due to Unit Differential Relay Trip.

There are no regulatory commitments contained in this letter.

Should you have any questions regarding the information in this submittal, please contact Dennis M. Moore, Site Regulatory Assurance Manager, at (315) 349-5219.

Respectfully,

Robert E. Kreider Jr.
Plant Manager, Nine Mile Point Nuclear Station
Exelon Generation Company, LLC

REK/RSP

Enclosure: NMP2 Licensee Event Report 2018-002, Turbine Trip and Scram Due to Unit Differential Relay Trip

cc: NRC Regional Administrator, Region I
NRC Resident Inspector
NRC Project Manager

IE22
NRR

Enclosure

NMP2 Licensee Event Report 2018-002,

Turbine Trip and Scram Due to Unit Differential Relay Trip

Nine Mile Point Nuclear Station, Unit 2

Renewed Facility Operating License No. NPF-69

NRC FORM 366 (04-2018) | U.S. NUCLEAR REGULATORY COMMISSION | APPROVED BY OMB: NO. 3150-0104 EXPIRES: 03/31/2020

LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)

(See NUREG-1022, R.3 for instruction and guidance for completing this form http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1022/r3/)

1. Facility Name	2. Docket Number	3. Page
Nine Mile Point Unit 2	05000410	1 OF 4

4. Title

NMP2 Turbine Trip and Scram Due to Unit Differential Relay Trip

5. Event Date			6. LER Number			7. Report Date			8. Other Facilities Involved	
Month	Day	Year	Year	Sequential Number	Rev No.	Month	Day	Year	Facility Name	Docket Number
									NA	NA
08	27	2018	2018	- 002	- 00				Facility Name NA	Docket Number NA

9. Operating Mode	11. This Report is Submitted Pursuant to the Requirements of 10 CFR §: *(Check all that apply)*			
1	☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
	☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
	☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
	☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☒ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
10. Power Level	☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
100%	☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
	☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(C)	☐ 73.77(a)(1)
	☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(D)	☐ 73.77(a)(2)(i)
	☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(vii)	☐ 73.77(a)(2)(ii)
		☐ 50.73(a)(2)(i)(C)	☐ Other (Specify in Abstract below or in NRC Form 366A)	

12. Licensee Contact for this LER

Licensee Contact	Telephone Number (Include Area Code)
Dennis Moore, NMP Regulatory Assurance Manager, 315-349-5219	315-349-5219

13. Complete One Line for each Component Failure Described in this Report

Cause	System	Component	Manufacturer	Reportable to ICES	Cause	System	Component	Manufacturer	Reportable to ICES
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

14. Supplemental Report Expected	15. Expected Submission Date	Month	Day	Year
☐ Yes (If yes, complete 15. Expected Submission Date) ☒ No		NA	NA	NA

Abstract (Limit to 1400 spaces, i.e., approximately 14 single-spaced typewritten lines)

At 0033 on August 27, 2018, Nine Mile Unit 2 (NMP2) experienced an automatic reactor scram on turbine control valve fast closure due to a turbine trip. All control rods inserted. There were no safety system actuations. In response to the turbine trip and reactor scram all systems responded per design. The station responded in accordance with appropriate procedures and restored impacted systems. The condition was reported in Event Notification #53565 as an event or condition that results in a valid RPS actuation (scram) pursuant to 10CFR.50.72(b)(2)(iv)(B). This event is being reported as an event or condition that results in a valid RPS actuation pursuant to 10CFR50.73(a)(2)(iv)(A).

The direct cause of this event is an actuation of the 'A' phase Unit Differential Relay, 87-2SPUY02(1) due to a grid disturbance on the 'A' phase of the 2-15 Clay – Edic transmission line. The root cause of the event is a failure of Relay & Control technicians to hold themselves accountable for use of the HU tools in preventing errors while removing grounding screws from the Unit Differential Relaying Circuitry. Corrective actions included: removal of the identified shorting screws and qualifications for those involved with the event.

NARRATIVE

I. DESCRIPTION OF EVENT

A. PRE-EVENT PLANT CONDITIONS:

Prior to the event NMP2 was at 100% power.

B. EVENT:

On August 27, 2018 at 0033 while operating at one hundred percent power, NMP2 experienced a turbine trip resulting in a SCRAM. In response to the turbine trip and reactor scram, Operations entered N2-EOP-RPV, Reactor Pressure Vessel (RPV) Control Flowchart and N2-SOP-101C, Reactor Scram, due to reactor pressure vessel low water level and high reactor pressure. Two Safety Relief Valves (SRV's) opened and reclosed during the transient. Operators established a normal RPV level band of 160-200 inches using Condensate and Feedwater, and a pressure band of 800-1000 psi using Digital Electro Hydraulic Control (DEHC) and turbine bypass valves.

C. INOPERABLE STRUCTURES, COMPONENTS, OR SYSTEMS THAT CONTRIBUTED TO THE EVENT:

None

D. DATES AND APPROXIMATE TIMES OF MAJOR OCCURRENCES AND OPERATOR ACTIONS:

All Occurrences and Action took place on August 27, 2018:

0033 Grid Disturbance Occurs Due to a Phase 'A' Fault External to the Station
0033 'A' Phase Unit Differential Relay Actuates
0033 RPS A and B Control Valve Fast Closure Trip Received
0033 Two Safety Relief Valves Opened and Closed Per Design
0033 Entered EOPs and SOPs:
N2-EOP-RPV, Control, for RPV Low Water Level and High Reactor Pressure
N2-SOP-101C, Reactor Scram.
0033 Established Normal RPV Level Band Using Condensate and Feedwater
0033 Pressure Band Established Using DEHC and Turbine Bypass Valves.
0039 Reset Level Setpoint Setdown Per N2-SOP-101C
0226 Exited N2-EOP-RPV Control
Exited N2-SOP-101C Reactor Scram

E. METHOD OF DISCOVERY:

This event was self-revealing.

F. SAFETY SYSTEM RESPONSES:

Following the reactor scram safety systems operated per design.

II. CAUSE OF EVENT:

The direct cause of this event is an actuation of the 'A' Phase Unit Differential Relay, 87-2SPUY02(1) due to a grid disturbance on the 'A' phase of the 2-15 Clay – Edic transmission line. The root cause of the event is a failure of the Relay & Control technicians to hold themselves accountable for use of the HU tools in preventing errors while removing grounding screws from the Unit Differential Relaying Circuitry. The screws were initially installed during the refuel outage to facilitate generator testing. The failure to remove all the screws after testing reduced the margin to actuation of the Unit Differential Relay Scheme making it vulnerable to the external fault outside of its zone of protection.

III. ANALYSIS OF THE EVENT:

This event is reportable in accordance with 10CFR.50.72(b)(2)(iv)(B) and 10CFR50.73(a)(2)(iv)(A). The event caused a valid actuation of the RPS system. The actuation was not part of a preplanned sequence during testing or reactor operation.

IV. CORRECTIVE ACTIONS:

A. ACTION TAKEN TO RETURN AFFECTED SYSTEMS TO PRE-EVENT STATUS

Operations responded in accordance with appropriate procedures and restored all impacted systems to pre-event status.

B. ACTION TAKEN TO PREVENT RECURRENCE

Corrective actions included: removal of the identified shorting screws and qualifications for those involved with the event.

V. ADDITIONAL INFORMATION

A. FAILED COMPONENTS

There were no failed components that contributed to this event

B. PREVIOUS LERS ON SIMILAR EVENT:

There are no previous LERs for similar events

C. THE ENERGY INDUSTRY IDENTIFICATION SYSTEM (EIIS) COMPONENT FUNCTION IDENTIFIER AND SYSTEM NAME OF EACH COMPONENT OR SYSTEM REFERRED TO IN THIS LER:

Component	IEEE 803 Function Identifier	IEEE 805 System Identification
Turbine Control Valve	ISV	SB
Turbine Bypass Valve	PCV	SB
Digital Electro Hydraulic Control System	NA	TG
Relay	RLY	FK
Main Turbine	TRB	TA
Reactor Protection System	N/A	SC

D. SPECIAL COMMENTS:

None